Ethnobotanical and Ethnomedicinal Survey of Nagzira Wild Life Sanctuary, District Gondia (M.S.) India- Part I


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ABSTRACT

The purpose of this study was to document the indigenous folk knowledge of the inhabitants of the Nagzira Wild Life Sanctuary in eastern Maharashtra, a region of the Indian subcontinent long known for its extraordinary beauty and biodiversity. One important result of the survey that was conducted of the inhabitants of this rugged hill country is that it revealed a total of 70 different plant species having ethnobotanical and ethnomedicinal uses. Taxonomically, the plants used by the villagers of this area were classified under 32 families of angiosperms.

INTRODUCTION

Recent research in plant science has focused mainly on ethnobotanical and ethnomedicinal investigations to fulfill the increasing demand of herbal products. Within the very rich, diverse flora of the Indian subcontinent are to be found many plants having ethnobotanical or ethnomedicinal importance. It has been reported that about 20,000 plant species are found in Indian flora, nearly all with different properties, of which about 7% are on the verge of extinction. Therefore it is essential to investigate such plants from core areas and unexplored regions and collect the indigenous knowledge regarding their utilities.

Nagzira (21°10’ N latitude and 17°12’E longitude) is one of the most popular sanctuaries of Maharashtra. It is well known for its beautiful landscapes and natural diverse flora and fauna. It comes under Tirora range of Gondia forest Division, Maharashtra, and covers about 152.810 square kilometers.

The natural vegetation of Nagzira sanctuary includes a variety of plant species having economic importance. It yields timber, gum and resinous plants, food and fodder.
plants, and plants having medicinal value. Some tribal communities (Gond, Gawali, Halbi and Pradhan) are native to the nearby sanctuary area. These tribals are largely dependent on forest products for their livelihood. They are knowledgeable about the utility of the majority of these plants. They collect gum, resin, fodder, timber and fuel wood from the sanctuary area and offer it for sale in the nearby town. Therefore, most of the plant species are either becoming less abundant or on the verge of extinction.

Several workers like Jain, 1963; Bhatnagar et al., 1973; Bhalla et al., 1992; Bajpai and Mitra, 1997 and Dubey et al., 2001, have been investigating the ethnobotany of northern, southern and central India. Similarly Kamble and Pradhan, 1980; Naik, 1998; Rothe et al., 2004 and Rothe, 2005, investigated the ethnomedicinal plants from Sahyadri- Satpuda ranges and remote tribal area of Melghat. However, the eastern part of Maharashtra remains neglected, even though the vegetation may be of ethnobotanical interest.

**MATERIAL AND METHODS**

Extensive surveys of the sanctuary were carried out in three different phases. First, from July 2003 to Sept. 2003, secondly from Oct. 2003 to Dec. 2003, and thirdly from Jan 2004 to March 2004. Later on, collections and ethnobotanical and ethnomedicinal information was obtained from Vaidus, Mukhiya, and Pradhan villagers. In all, the tribals of nine different villages (Nagzira, Chorkhambara, Bodalksa, Rengepar, Murpar, Lendezari, Malutola, Talezari, Balapur) were interviewed. A total of 70 different plant species were surveyed and collected. The collected material is deposited in the Department of Botany, Manoharbhai Patel College, Sakoli in the form of herbarium sheets and photographs. Ethnobotanical and ethnomedicinal uses of the collected plants are described below.

Note: Species uses marked with an asterisk are reported here for the first time.

1. *Acacia nilotica* (L.) Willd
   Family: Mimosaceae
   Local name: Babool
   Habit: Small tree
   Part used: Leaves, Wood, Gum and Bark
   Ethnobotanical use: The leaves are used as fodder for goats. The stem wood is hard and used in the making of furniture, agricultural tools and houses. It is also used for household fuel.
   Ethnomedicinal use: The raw gum obtained from the stem of this medicinal species has long been known for its cooling, healing and astringent properties. It is used in the treatment of diarrhea, dysentery and diabetes. The bark is mixed with honey and applied to the eyes to relieve conjunctivitis and to stop lacrimination.

2. *Acacia catechu* L.
   Family: Mimosaceae
   Local name: Khair
Habit: Tree  
Part used: Wood and Leaves  
Ethnobotanical uses: The wood of this species is used for the making of agricultural tools and furniture. It is also used for household fuel, and the leaves of this tree are used as fodder for goats.

3. *Acacia leucophloea* L.  
Family: Mimosaceae  
Local name: Hiwar  
Habit: Tree  
Part used: Wood and Leaves  
Ethnobotanical uses: The wood of this species is used for the making of agricultural tools. It is also used as a household fuel.  
Ethnomedicinal use: The fresh leaf juice of this species is used in the treatment of scorpion bites.

4. *Adathoda vasica* Nees.  
Family: Acanthaceae  
Habit: Perennial herb or under shrub  
Part used: Leaves  
Ethnomedicinal uses: An extract of the dried leaves of this species is used as an expectorant. Juice from the fresh leaves is given to relieve the symptoms of cough and cold. It also contain a component of glycodin, vasaka-a.

5. *Asparagus adscendens* L.  
Family: Liliaceae  
Local name: Satawari/ Marbat  
Habit: Climber  
Part used: Rhizome  
Ethnomedicinal uses: The rhizome of this plant is used to treat digestive problems, jaundice and liver ailments. A tonic made from the rhizome of this species is also used as a sexual stimulent.

6. *Argemone mexicana* L.  
Family: Papaveraceae  
Local name: Piwala Dhotra  
Habit: Annual herb  
Part used: Seeds  
Ethnomedicinal uses: The powdered seed of this species, mixed with coconut oil (1:5, W/V), is used to treat fungal infection.

7. *Aegle marmelos* Correa.  
Family: Rutaceae  
Local name: Bel  
Habit: Tree  
Part used: Leaves, Root and Fruit  
Ethnobotanical uses: Tribals and local people use the fruits of this tree for the making of...
pickles.
Ethnomedicinal uses: The fruits of this species are used to treat dysentery, diarrhea and piles. They are also used as a brain tonic. The pulp of the ripe fruit is used as a cooling agent. The roots are used to check vomiting, and the leaves are good for diabetes.

8. Achyranthus aspera L.
Family: Amaranthaceae
Local name: Kutri
Habit: Annual herb
Part used: Entire plant
Ethnomedicinal uses: An aqueous extract of this plant is used in the treatment of eye disorders, and for the treatment of cough and indigestion. It is also used to counter snake bites and piles*.

9. Amaranthus virdis L.
Family: Amaranthaceae
Local name: Chaulee
Habit: Annual herb
Part used: Leaves
Ethnomedicinal uses: This species is said to be a good blood purifier. It is also used in the treatment of piles, and can be taken as a digestive agent.

10. Azadirachta indica A. Juss.
Family: Meliaceae
Local name: Neem
Habit: Tree
Part used: Leaves, Bark, Seed and Root
Ethnobotanical uses: The wood is used for making furniture and building materials. Ethnomedicinal uses: The leaves and root extract of this species is used in the treatment of leprosy and leucoderma. A leaf extract is also given for snake bites and scorpion sting. The roots are used to relieve jaundice and skin diseases. The bark, having antifungal properties, is used to treat eczema and boils.

11. Albizia lebbeck (L.) Bth.
Family: Mimosaceae
Local name: Sirish
Habit: Tree
Part used: Wood
Ethnobotanical uses: The wood of this tree is used in the construction of houses and furniture.

12. Ageratum conyzoides L.
Family: Asteraceae
Local name: Muhkra
Habit: Annual herb
Part used: Entire plant
Ethnomedicinal uses: This plant is used to counter stomach disorders. Also, an extract of the entire plant is taken as a tonic.
Family: Liliaceae
Local name: Korphad
Habit: Perennial shrub
Part used: Leaves
Ethnomedicinal uses: The leaf juice of this species is used against liver problems, piles, jaundice and rheumatism. The juice of the roasted leaf is given for cold, cough and fever. The leaf itself is used for skin diseases and as cosmetic to remove wrinkles and remedy burns. The juice or paste of the leaf, when added to germinated *Trigonela foenum-graceum* seeds, is helpful in preventing hair loss.*

14. *Bauhinia variegata* L.
Family: Caesalpinaceae
Local name: Kachnar
Habit: Tree
Parts used: Stem, Bark, Flowering buds
Ethnobotanical uses: Stem/ wood is used as timber. The flowering buds are edible and are eaten as a vegetable.
Ethnomedicinal uses: The bark of this species is an anthelmintic. Since it is astringent, it is used often in tonics. In years past, people were reported to have used the bark paste of this species for the treatment of skin diseases and leprosy.

15. *Butea monosperma* (Lamk.)
Family: Fabaceae
Local name: Palas
Habit: Tree
Part used: Flowers and fruits
Ethnobotanical uses: The wood of this species is one of the chief sources of household fuel. The dye obtained from its flowers is used widely during Holi and as fiber colorant.
Ethnomedicinal uses: An extract of the flowers of this tree is used for the treatment of burning sensations, and other skin diseases. The fruits have aphrodisiac and anthelmintic properties, and are given for the treatment of urinary problems, piles, worms and abdominal disorders.

16. *Bombax ceiba* L.
Family: Bombacaceae
Local name: Saur
Habit: Tree
Parts used: Wood and Fruit floss.
Ethnobotanical uses: The fruit floss of this tree is used for the stuffing of pillows, cushions and mattresses, etc., and the wood is used for the making of light furniture.

Family: Poaceae
Local name: Bans
Habit: Tree
Parts used: Branches, Stem and Leaves.
Ethnobotanical uses: The branches of this tree are used in the making and thatching of huts, and in the making of ladders. The split stems are used in the manufacture of baskets and mats.

Ethnomedicinal uses: The leaf buds of this species are used in the treatment of thread worms, and the leaf juice is given in the treatment of the vomiting of blood.

Family: Cuscutaceae
Local name: Amarvel
Habit: Parasitic climber
Part used: Whole plant
Ethnomedicinal use: An infusion of this plant is used in the treatment of lice infections, and for the washing of sores.

Family: Poaceae
Local name: Tikhadi/ Gauti Chai
Habit: Annual herb
Part used: Entire plant
Ethnobotanical uses: This species is used as a carminative and stimulant. Its specific use lies in the treatment of blood disorders, coughs and indigestion.

20. *Cardiospermum helicacabum* L.
Family: Sapindaceae
Local name: Kapal phodi
Habit: Herb
Part used: Leaves
Ethnomedicinal uses: The leaf juice of this species is used in the treatment of dysentery.

21. *Cassia fistula* L.
Family: Caesalpinaceae
Local name: Bahawa
Habit: Tree
Part used: Leaves, flowers, Bark and Root
Ethnomedicinal uses: The fresh leaves and flowers of this tree are used in the treatment of ringworm and some skin diseases. An aqueous root extract is given to cure common fever. The bark is a laxative and astringent.

22. *Cassia tora* L.
Family: Caesalpinaceae
Local name: Tarota
Habit: Annual herb
Part used: Entire plant
Ethnobotanical uses: The leaves of this plant along with the tender stems are used for vegetables.
Ethnomedicinal uses: A whole plant extract of this species is used to cure psoriasis.

Family: Asclepiadaceae  
Local name: Rui  
Habit: Shrub  
Part used: Entire plant and Latex  
Ethnomedicinal uses: A paste made from the entire plant of this species is mixed with sugar and applied over dog bites*. The dry leaves are smoked as a treatment for cough and asthma. The latex is useful in the treatment of ringworms and skin disease.

24. Crotolaria juncea L.  
Family: Fabaceae  
Local name: Sontag  
Habit: Shrub  
Part used: Bark of stem  
Ethnobotanical uses: The stem bark of this species yields fiber that can be utilized for the making of ropes.

25. Dendrocalamus strictus (Roxb.) Nees.  
Family: Poaceae  
Local name: Bamboo  
Habit: Tree  
Part used: Leaves, Branches and Stem  
Ethnobotanical use: Branches are used for making and thatching huts, making ladders, carts and pipes. The splits stems are used for the weaving of baskets and mats.  
Ethnomedicinal uses: The leaves of this species are used for the treatment of coughs and colds in pet animals.

Family: Fabaceae  
Local name: Shisham  
Habit: Tree  
Part used: Wood, Bark  
Ethnobotanical uses: The hard wood of this tree is used for the making of furniture.  
Ethnomedicinal uses: The powdered bark of the tree is used in the treatment of gonorrhea.

27. Datura metal L.  
Family: Solanaceae  
Local name: Dhotra  
Habit: Herb  
Part used: Leaves, Fruits and Seeds  
Ethnomedicinal uses: The dried leaves of this species are smoked in the treatment of asthma and bronchitis. The fruit juice is taken as a preventative against dandruff and hair fall. Seeds are astringent, antispasmodic, narcotic and intoxicant.

28. Euphorbia hirta L.  
Family: Euphorbiaceae  
Local name:  
Habit: Annual herb
Part used: Entire plant
Ethnomedicinal uses: An extract of the entire plant of this species is used in the treatment of cough, asthma, piles, and semen debility

Family: Euphorbiaceae
Local name: Awala
Habit: Tree
Part used: Fruits
Ethnomedicinal uses: The fruits of this tree are used in the treatment of diabetes, heart disorders, eye problems, rheumatism and diarrhea.

30. *Ficus recemosa* L.
Family: Moraceae
Local name: Umber
Habit: Tree
Part used: Wood, Leaves, Latex, Fruits
Ethnobotanical uses: Wood is used as fuel.
Ethnomedicinal uses: The astringent leaves of this species are used as a mouthwash for spongy gums. The latex of the stem is useful in the treatment of piles and diarrhea. Fruits are edible, astringent and carminative. They are said to be useful in relieving stomachache.

Family: Moraceae
Local name: Peepal
Habit: Tree
Part used: Wood, Bark, Fruits
Ethnobotanical uses: The wood of this tree is used for household fuel.
Ethnomedicinal uses: A decoction of the bark of this species is given to treat gonorrhea and scabies. The edible fruits are used as a laxative.

32. *Ficus glumerota* Wall. Ex Roxb.
Family: Moraceae
Local name: Gular
Habit: Tree
Part used: Fruits
Ethnomedicinal uses: The fruits of this tree are eaten to counter constipation. They are also used for the treatment of lung and urinary problems.

33. *Ficus bengalensis* L.
Family: Moraceae
Local name: Bad/ Bargad
Habit: Tree
Part used: Latex
Ethnomedicinal uses: The latex of this plant is used to treat dysentery, diarrhea, piles, tooth decay, rheumatism and skin diseases.
34. *Grewia tillifolia* (Vanl.)
Family: Tiliaceae  
Local name: Dhaman  
Habit: Small tree  
Part used: Wood, Leaves and Bark  
Ethnobotanical uses: The wood of this tree is used in the making of furniture and agricultural implements. The leaves are used for fodder; whereas the bark is utilized for the making of fiber and ropes.

35. *Heteropogon contortus* L.
Family: Poaceae  
Local name: Kusal gavat  
Habit: Herb  
Part used: Entire plant  
Ethnomedicinal uses: An oil extract of this plant is used in the treatment of appendicitis and scorpion bite.

36. *Hemidesmus indicus* R. Br.
Family: Asclepiadaceae  
Local name: Khobarvel/ Anantmul  
Habit: Climber  
Part used: Entire plant  
Ethnomedicinal uses: This species is used in the treatment of fever, diabetes, cough and blood disorders. It is also used as a tonic and a diuretic, and for the treatment of hypertension.

37. *Jatropha curcus* L.
Family: Euphorbiaceae  
Local name: Chandrajot/ Ratanjot  
Habit: Perennial herb  
Part used: Seeds  
Ethnomedicinal uses: The powdered seed of this species is dissolved in water and given for the treatment of cholera, dysentery and stomach disorders. It is also effective for the treatment of skin diseases and rheumatism.

38. *Lantana camera* L.
Family: Verbinaceae  
Local name: Panchphuli/ Ghaneri  
Part used: Whole plant  
Ethnobotanical uses: Because of the colorful blooms of this species, it is often planted as an ornamental in gardens.  
Ethnomedicinal uses: Although this species is a very poisonous plant, it has found occasional use as an intoxicant.

39. *Lawsonia inermis* L.
Family: Lythraceae  
Local name: Heena/ Mehandi  
Habit: Perennial under shrub
Part used: Leaves
Ethnobotanical uses: The leaf juice or paste from this species is used in the coloring of hair and in painting Mehandi on palms.

40. *Morus alba* L.
Family: Moraceae
Local name: Tuti
Habit: Shrub
Part used: Leaves, Fruits
Ethnobotanical uses: The leaves of this shrub are used as fodder for sheep and goats.
Ethnomedicinal uses: The leaves of this species have emollient properties. They are reported to be good for the cleansing of the throat. They are also used for a cooling agent, as well as for their astringent and anthelmintic properties. The fruits are used as a laxative and purgative.

41. *Mangifera indica* L.
Family: Anacardiaceae
Local name: Amba/ Aam
Habit: Tree
Part used: Stem, Branches, Bark, Fruits, Seed and Root
Ethnobotanical uses: The wood of this species is used for the making of furniture and plywood, and the branches are used as household fuel. The fruits are edible, aromatic and tasty, and can be used in the preparation of pickles.
Ethnomedicinal uses: The bark of this species is used as an appetizer, aphrodisiac, astringent and cardiac medicine. The fruits and seeds are used in the treatment of bleeding piles and skin diseases.

42. *Mytragyna parviflora* Roxb.
Family: Rubiaceae
Local name: Kadamb
Habit: Tree
Part used: Wood
Ethnobotanical uses: The wood of this tree is used in the manufacture of houses, furniture and agricultural implements.

43. *Merremia emarginata* Hallier.
Family: Convolvulaceae
Local name: Undir kana
Habit: Herb
Part used: Leaves
Ethnomedicinal uses: The fresh leaf juice of this species is given in the treatment of corns.

44. *Memordica dioca* Roxb.
Family: Cucurbitaceae
Local name: Kadu karle
Habit: Shrub
Part used: Leaves
Ethnomedicinal uses: The fresh leaf juice of this shrub is used as antiseptic.
45. *Opuntia dilleni* Haw.
Family: Cactaceae  
Local name: Nagphani  
Habit: Shrub  
Part used: Phylloclades and fruits  
Ethnomedicinal uses: A poultice made from the phylloclades of this cactus is used for the extraction of guinea worms. The edible fruits are used as a demulcent and expectorant. Juice made from the ripe fruit is used in the treatment of asthma and whooping cough.

46. *Ocimum americanum* L.
Family: Lamiaceae  
Local name: Dev tulsi  
Habit: Perennial herb  
Part used: Leaves  
Ethnomedicinal uses: A paste or extract made from the leaves of this species is applied to the skin in cases of eczema or other epidermal infections.

47. *Ocimum basilicum* L.
Family: Lamiaceae  
Local name: Kali tulsi  
Habit: Perennial herb  
Part used: Leaves and Seed  
Ethnomedicinal uses: An infusion of the leaves of this species is often used as a tonic. The leaves are helpful in the treatment of skin infections. They can be added to tea or honey to relieve the symptoms of cold and cough.

48. *Phyllanthus niruri* L.
Family: Euphorbiaceae  
Local name: Bhui-awala  
Habit: Annual herb  
Part used: Entire plant  
Ethnomedicinal uses: Because this species is a diuretic, it is often used in the treatment of jaundice and urino-genital infections. It is also made into a tonic for the treatment of liver problems.

49. *Pithocolobium dulce* Benth.
Family: Euphorbiaceae  
Local name: Vilayati imli  
Habit: Tree  
Part used: Fruits  
Ethnomedicinal uses: The edible fruits of this species are used to cure common fever and dysentery.

50. *Plumbago zeylanica* L.
Family: Plumbaginaceae
Local name: Chitrak
Habit: Annual herb
Part used: Entire plant
Ethnomedicinal uses: This species is reported to be effective in the treatment of intestinal disorders, skin diseases and rheumatism.

Family: Fabaceae
Local name: Bija
Habit: Tree
Part used: Wood, Bark and Leaves
Ethnobotanical uses: The wood of this tree is used in the manufacture of agricultural tools and light furniture.
Ethnomedicinal uses: The powdered bark and fresh leaf extract of this species is used in the treatment of leprosy, diabetes, ulcer, leucoderma and skin diseases. It is also used cosmetically for the improvement of one's complexion.

52. *Ricinus communis* L.
Family: Euphorbiaceae
Local name: Arand
Habit: Shrub
Part used: Leaves, Seeds, Oil
Ethnomedicinal uses: The leaves of this plant have emetic, narcotic, poisonous, and purgative properties. A poultice made of the leaves of this species is used in the treatment of swellings. Castor oil is given to mothers before and after child birth to counter constipation. Although very poisonous, the seeds of this species in proper dosage can be used as a sedative.

Family: Apocyanaceae
Local name: Sarpagandha
Habit: Shrub
Part used: Roots
Ethnomedicinal uses: The powdered root of this species when taken with butter is used in the treatment of insomnia. It is also used as a sedative, depressant, febrifuge, antihypertensive and tonic.

54. *Rauwolfia tetraphylla* L.
Family: Apocyanaceae
Local name: Chandrika
Habit: Perennial herb
Part used: Roots
Ethnomedicinal uses: The roots of this plant are useful in the treatment of mouth pain. They are also given as an anti-inflammatory and in cases where there is a burning sensation of the stomach. Care must be taken as an overdose is poisonous.

55. *Sonchus asper* L.
Family: Asteraceae  
Local name: Mhatari  
Habit: Annual herb  
Part used: Whole plant  
Ethnomedicinal uses: This species has diuretic, cooling, sedative and antiseptic properties. It is helpful in the treatment of cough, bronchitis and Asthma.

56. *Syzigium cumini* (L.) Skeels.  
Family: Myrtaceae  
Local name: Jambhul  
Habit: Tree  
Part used: Stem, Branches, Bark and Fruits  
Ethnobotanical uses: The stem and branches of this tree provide household fuel.  
Ethnomedicinal uses: The powdered bark of this species is given to relieve stomach problems, indigestion, leucoderma, ring worm and diabetes. The fruits have carminative, astringent and diuretic properties.

57. *Semicarpus anacardium* L.  
Family: Anacardiaceae  
Local name: Bhilwa/ Bibba  
Habit: Tree  
Part used: Fruit and Seed  
Ethnomedicinal uses: The fruits of this species are eaten to relieve indigestion. They are also used in the treatment of coughs, piles and boils. The oil from the seed of this plant is anthelmintic, and it has been also reported to be good for the treatment of scabies.

58. *Solanum xanthocarpum* Schard & Wendl  
Family: Solanaceae  
Local name: Bhui ringani  
Habit: Herb  
Part used: Leaves  
Ethnomedicinal uses: A fresh leaf extract of this species is given in the case of respiratory diseases and dropsy. It has also been reputed to be good for the treatment of gonorrhea and snake bite.

59. *Sapindus laurifolius* L.  
Family: Sapindaceae  
Local name: Reetha  
Habit: Tree  
Part used: Fruits  
Ethnomedicinal uses: A shampoo made from the fruits of this tree is reputed to promote hair growth.

60. *Tectona grandis* L.  
Family: Verbinaceae  
Local name: Sagwan  
Habit: Tree
Part used: Wood
Ethnobotanical uses: The wood of this tree is used in the making of houses, furniture and agricultural tools.

61. *Tamirandus indica* L.
Family: Ceasalpinaceae
Local name: Chinch/ Imli
Habit: Tree
Part used: Leaves, Bark and Fruits
Ethnomedicinal uses: The dry, powdered bark of this species is given to relieve gastric pain. The fruits are used for tonic, and are reportedly good for the curing of dandruff. A paste made from the leaves of this tree is useful in the treatment of inflammation*, blood disorders and acne.

Family: Combrataceae
Local name: Beheda
Habit: Tree
Part used: Stem, Branches and Fruit
Ethnobotanical uses: The stem and branches provide household fuel.
Ethnomedicinal uses: The dried fruit of this tree is used in the treatment of cough, fever, indigestion, dropsy, leprosy, piles, and etc. The fruit has long been used in the Ayurvedic preparation called “Triphala Churna,” which also contains the fruit of *T. chebula* and *E. officinalis*.

63. *Terminalia tomentosa* L.
Family: Combrataceae
Local name: Ain
Habit: Tree
Part used: Wood
Ethnobotanical uses: The wood of this tree is used in the manufacture of furniture and agricultural implements.

64. *Terminalia arjuna* (DC) Weight & Arn.
Family: Combrataceae
Local name: Arjun
Habit: Tree
Part used: Wood and Bark
Ethnobotanical uses: The wood of this tree is used in the manufacture of furniture
Ethnomedicinal uses: The astringent bark of this species is used as a febrifuge and as a coolant and cardiac stimulant.

65. *Vitex negundo* Hausskn.
Family: Verbinaceae
Local name: Nirgudi
Part used: Leaves and Branches
Ethnomedinal uses: The leaves of this species are crushed and mixed with wheat flour for use
in skin disorders. Also, the leaves are smoked to relieve headaches. The branches can be used as a toothbrush. This species also has anthelmintic and diuretic properties.

66. *Vanda roxburghii* R. B.
Family: Orchidaceae  
Local name: Banda  
Habit: Epiphyte  
Part used: Entire plant  
Ethnomedicinal uses: This species is useful in the treatment of rheumatism and arthritis.

Family: Rhamnaceae  
Local name: Bor/Ber  
Habit: Tree  
Part used: Wood, Bark, Leaves and Fruits  
Ethnobotanical uses: The wood of this tree is used in the manufacture of furniture and as fuel. The leaves are used for goat fodder.  
Ethnomedicinal uses: The edible fruits of this tree act as a blood purifier. They are also reported to cure indigestion. A decoction made from the fruit of this species is given for respiratory problems. The macerated bark is mixed with milk and honey, and is taken for the treatment of diarrhea, dysentery, cough and cold.

68. *Vernonia anthelmintica* Willd.
Family: Asteraceae  
Local name: Kadujire  
Habit: Herb  
Part used: Seeds

69. *Tinospora cordifolia* (Willd.) Miers,
Family: Menispermaceae  
Local name: Gulvel  
Habit: shrubby climber  
Part used: Roots

70. *Wrightia tinctoria* Br.
Family: Apocynaceae  
Local name: Kayakuda  
Habit: Tree  
Part used: Bark  
Ethnomedicinal uses: The bark of this species together with the seeds of *Vernonia anthelmintica* and the roots of *Tinospora cordifolia* are individually crushed into a fine powder. A mixture of the three powders (1:1:1, W/W) is then taken in water to counter gaseous intestinal problems and febrifuge. This mixture is also used as an antipyretic.

**RESULT AND DISCUSSION**

Research and extension work are the major pathways to integrate folk knowledge
about ethnobotanical and ethnomedicinal plants for modern primary health care and human welfare. The major objective should be to match safe, effective remedies to common illnesses, using local medicinal plants and cost effective household needs. The problem is that very little is known about folk and traditional medicine proper, and it is impossible to say how effective they are without a lot more research.

This survey provides evidence that the tribal people and other villagers residing in the near vicinity of the Nagzira sanctuary use about 70 plant species for the treatment of various ailments and household uses. The tribal people depend mostly on herbal medicines as there are no clinics in the villages. The plants are generally used for stomach disorders, skin diseases, aphrodisiacs, fever, tonic, ulcer, asthma, snake-bite, respiratory diseases, leucorrhoea, dandruff, eye-diseases, diabetes, and in the treatment of cancer. Some plants were used for the manufacture of houses, furniture and agricultural implements. As the villagers of this area are mostly illiterate, they know how to make use of their plants but have little or no knowledge on how to conserve them. Thus, there is an urgent need for training in conservation and on the cultivation of plants of economic importance.

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